Water for
Tucson's Future

Tucson Water's

Long Range Water Resource Planning

Our Water Resources: *Effluent*

Tucson Water is in the process of developing a Long Range Water Resource Plan that will help determine where our water will come from in the future, how much it might cost, and what its quality will be.

Tucson has three water sources – groundwater, Colorado River water, and effluent (treated wastewater).

Effluent

There are a number of good reasons why wastewater effluent can be considered an excellent resource for Tucson's future. Effluent is the only source of water we have that increases as population rises. Also, because the City of Tucson owns much of the effluent that flows from Pima County's two municipal wastewater treatment plants along the Santa Cruz River, Tucson Water does not have to purchase this alternate water resource. Finally, as effluent filters down through the earth, it replenishes the groundwater in our region.

Currently, Tucson Water has access to about 11 billion gallons of effluent each year. Being put into the Santa Cruz River bed allows most of this effluent to recharge. But a portion of the effluent is taken by Tucson Water to 'reclaim' for other uses.

The Importance of Effluent in the Future

Because much of our community's effluent is a growing water resource that belongs to Tucson Water, our planners working on the Long Range Water Resource Plan are looking at it in various ways for future use. With growing projected water demand and the limitations of our groundwater and Colorado River water resources, we need to develop plans for the eventual use of our effluent supply – either through much larger reclaimed water use, securing it in long-term storage for some future use, or using it to augment our water supplies through recharge or some other means.

Reclaimed Water

Our reclaimed water system uses a water transmission system that is completely separate from the system that delivers drinking water to your home. In 2004 we have 4,000 miles of water mains in the drinking water system, but only 100 miles of piping in the reclaimed water system.

One way we are currently using our effluent, is by treating it to create reclaimed water for irrigation. Since nearly 60% of all the water used in Tucson is used outside – for irrigation – creating this non-potable water to keep landscaping flourishing is a smart way to use effluent. Because it's produced by treating wastewater, reclaimed water is a truly renewable water resource that will always be available to us. Reclaimed water is created through a multi-stage advanced treatment process that cleans wastewater to a standard good enough for turf and landscape irrigation, and suitable for some industrial uses such as cooling towers.

Tucson Water's reclaimed water system began in 1984 and is operated separately from our drinking water system. Reclaimed water is used for irrigation at more than 600 locations in the Tucson area, including 14 golf courses, 32 parks, and 40 schools, including the University of Arizona and Pima Community College. However, most of the major irrigation customers located in the Tucson Water service area are already using reclaimed water, which means that dramatically increasing its use in the future is a challenge.

Using reclaimed water for irrigation saves our precious drinking water. In 2003, reclaimed water use saved 3.7 billion gallons of drinking water. That's enough to serve more than 30,000 Tucson families for a year.

CITY OF TUCSON

TUCSON WATER

Can Reclaimed Water Work in Your Home?

A number of residential properties in Tucson use reclaimed water for irrigation, but these are, for the most part, special situations where customers use a great deal of water to maintain landscaping with homes that are very close to a reclaimed water main. For the vast majority of Tucson Water customers to have reclaimed water available at their homes, Tucson Water would need to construct a extensive reclaimed water delivery system completely separate from the one that currently brings drinking water to your home. In addition, existing homeowners would need to separate their irrigation system from the rest of their plumbing system, to prevent the possibility that reclaimed water could mix with potable drinking water. While this is not impossible, it would be an extremely expensive option for using our effluent.

Some of our effluent is processed through Tucson Water's Sweetwater Wetlands, recharged, and later recovered, combined with the water produced by our reclaimed treatment plant, and delivered to customers for landscape irrigation.

The Future of Reclaimed Water

Reclaimed water makes up about 8% of all the water delivered by Tucson Water during a typical year. In 1994 and again in 2000, Tucson voters approved bonds to expand our reclaimed water system. These bond funds are being used to make sure that our reclaimed water system will grow as Tucson grows. Reclaimed water will continue to provide 8% of our overall annual water use in the future.

New reclaimed reservoirs and pipelines are being constructed or have recently been completed by Tucson Water at several locations around the metropolitan area to either make this resource available to new customers or to meet growing demand from existing customers.

Our reclaimed system was started more than 20 years ago. Today, water professionals from all over the world visit Tucson to study this system and learn how they can best use treated wastewater as an additional resource in their countries or cities. It's a reminder that reliable and sustainable water resources are becoming increasingly more difficult to develop in many parts of the world. Tucson Water will continue to plan, design and build to make sure our community can rely on our reclaimed water resource.

For more information about Tucson Water's Long Range Water Resource Planning, call us at 791-2666 or visit our web site at www.cityoftucson.org/water.